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WALTER M. DICKIE, M.D., Director

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EDITOR

*Psittacosis in California**

Birds of the Psittacine (Parrot) Family Responsible for a New Disease.—Whether some choose to believe it or not, the fact remains that there is a disease known as psittacosis, found in birds of the psittacine (parrot) family. And further, that human beings can and do contract that disease.

In this October issue of "California and Western Medicine" as reported on page 257, three cases are presented: two by Doctor Steele of Santa Barbara; the third, that of Dr. H. E. Hasseltine, an officer in the United States Public Health Service.

* * *

Psittacosis Has Been an Important California Public Health Problem.—No recent public health activity has given the California State Board of Health more distress, or taken more time for proper study, than the efforts necessary in the last several years to eradicate psittacosis in California, and to eliminate it as a cause of human illness and death. Several factors complicate the solution of the problem—among them, first, the fact that the raising of parrots ("love birds" in particular), is an industry of considerable importance in Southern California. Secondly, the owners of many of the aviaries are citizens of very moderate means, to whom the quarantining of aviaries often means a personal and serious bread-and-butter consideration; third, the shipment of parakeets to other states involves the United States Public Health Service; and fourth the lack of legislative appropriation to compensate owners for birds ordered to be

destroyed by the representatives of the State Board of Health adds to the complexities of the situation.

The economic extent of the parrot-breeding industry, and the amount of laboratory investigation carried on by the State Board of Health may be gleaned from portions of a letter of July 19 to the board's president:

"The survey, which we have conducted in Los Angeles County, shows there are 302 commercial aviaries with parakeets listed at 39,233. (Including those in private aviaries, there are 56,000.) There have been 112 aviaries certified in the state in the past year, eighty-three of these being in this county.

"Since Miss Beck (technician pathologist of the Board) came down here in March, 1934, she has autopsied 11,000 birds (approximately)."

* * *

Psittacosis Regulations Have caused More or Less Irritation in the Industry.—As before stated, a very considerable number of citizens who have taken up the breeding of birds of the parrot family, as a major or as a side-line, are persons in comparatively humble economic circumstances. When such persons possess aviaries containing several hundred of birds, and the aviaries are kept in quarantine for months, the cost of feeding and care may amount to considerable sums. Many of these citizens have been propagandized by others of their fellows, who hold that there is no such disease as psittacosis, and that the restrictions placed upon the breeding, sale and shipment of parrots by the California State Board of Health are not necessary. From individuals, and from organizations representing the industry, therefore, protests have

* This article is a reprint of an editorial printed in "California and Western Medicine," official journal of the California Medical Association.

been registered with the California State Board, with members of the legislature and other state officials.

* * *

State Regulations Were Necessary to Prevent a Federal Embargo on Shipments.—The State Board of Health, however, has had no option in the premises, because outbreaks of psittacosis in Minnesota, Pennsylvania and elsewhere, traced to parrakeet shipments presumably from California, led the United States Public Health Service to inform the California authorities that, if the State Health Department did not exercise adequate supervision, then the Federal government would place an embargo upon all interstate shipments of birds of the psittacine family.

* * *

Federal Public Health Service Objects to Less Strict Regulations.—Recently the request of a group of aviary owners for an amelioration of the requirements for certification of shipment of interstate psittacine birds was forwarded to Surgeon-General H. S. Cummings; and in a reply, dated August 14, 1935, sent to the California State Board of Health, the Surgeon-General wrote as follows:

"Since experience with the enforcement of your existing State regulations over a period of more than a year has demonstrated that these regulations apparently are giving satisfactory protection to the other states against the transmission of psittacosis through interstate shipments, the Public Health Service would not look with favor upon any change at this time.

"While this office has expressed the view that the use of young birds for testing purposes would appear to be satisfactory, purely from a scientific standpoint, this statement should not be taken as an indication that the Public Health Service recommends the substitution of this method for the procedure now used by the State of California which calls for the testing of both immature and mature birds.

"It is suggested that the bird breeders again be informed that should any change in procedure required under the existing regulations result in another outbreak of psittacosis traceable to California through an interstate shipment, the Public Health Service would not temporize further, but would recommend an absolute quarantine against all shipments to other states."

* * *

The Present Status of the Psittacosis Problem.—A perusal of the above makes it very evident that the Federal government will tolerate no letting down in the rules and regulations having to do with interstate shipments, upon which depend largely the profits from the industry; and as it is apparent that psittacosis must be included in the list of diseases only recently recognized as having possibility of serious menace to the public health, the work already done in California largely through the cooperation of Dr. Karl F. Meyer, director of the Hooper Foundation of Medical Research of the University of California, is worthy of special attention. It is true that the State Health Board was required to change its regulations from time to time as new facts concerning the disease were proven; but at all times an effort has been made to be as lenient as considerations warranted. The study of psittacosis continues to receive earnest attention in the Hooper Foundation laboratories in the Medical Center in San Francisco.

PSITTACOSIS *

WITH REPORT OF TWO CASES

By ARTHUR BRUCE STEELE, M.D., Santa Barbara

DISCUSSION By Karl F. Meyer, San Francisco.

The diagnosis of obscure fevers has been facilitated by a better understanding of the symptomatology and pathology of disease caused by certain incitants. The closer cooperation between clinician, clinical pathologic laboratory and, at times, the State Public Health Service, has made for efficiency. The common diagnosis of influenza with or without bronchopneumonia has served to screen more careful investigation of probable etiologic factors.

The following two case of psittacosis (with recovery) are presented to demonstrate the ease with which the etiology of this obscure fever may readily be confused and mistaken.

REPORT OF CASES

NOTE.—Portions only of the case reports are reprinted in "The Bulletin." Technical paragraphs are omitted.

CASE 1.—C. T. C. (65), American pet-shop dealer in Santa Barbara.

Family History.—Wife, age 62, shares the duties of the pet-shop. One daughter, married, is in good health.

Past History.—The patient has always enjoyed very good health, having had no serious illnesses nor operations. A mild bronchitic cough for many years, nocturia two or three times, and moderate overweight have been present.

Occupation.—The patient has been a dealer in birds for twenty-eight years, having been in Chicago prior to coming to Santa Barbara in 1912. He has been in contact with imported birds from South America ports as well as the Orient during many years of his life, and has related numerous instances of nursing sick birds, parrots, and parrakeets coming in shipments to his shop. Never, however, has he had symptoms of illness comparable to those experienced at the present time.

Present Illness.—About June 14, 1935, generalized aching throughout the body, with malaise and anorexia were experienced. A few days later chills and fever were complained of. Nausea and vomiting followed with a persistent bad taste in the mouth. After June 17 there was a sense of fullness in the pit of the stomach, and no tolerance for food without vomiting was daily present. A dull aching pain in the upper abdomen started about June 20, not entirely relieved by emptying the stomach nor taking soda. A moderate constipation, slight hacking cough with mucopurulent expectoration were present. Restlessness, anxiety, and prostration were apparent.

Physical Examination.—June 22, 1935—revealed an elderly male, flushed, with blood-shot eyes, perspiring freely, and complaining of severe pain in the abdomen. The pulse rate was 80 per minute; respirations, 20; temperature, 103 degrees Fahrenheit; and blood pressure, 140/65. The eyes were red, and conjunctivae were injected. Except for marked tenderness in the epigastrium, with moderate abdominal distention, there were no abnormal signs elicited. Careful search for evidence of pulmonary pathology was lacking. All the symptoms and signs were referable to the abdomen. * * *

Course of disease and investigation: The acute illness warranted hospitalization, and the patient was admitted to the Saint Francis Hospital, Santa Barbara, June 23, 1935. * * *

The hacking cough which was present at the onset increased in severity, and the sputum, at first mucopurulent, became purulent, at times flecked with blood. A specimen was forwarded on June 27 to Dr. K. F. Meyer, Hooper Foundation, San Francisco, approximately the thirteenth day of the disease. This material was extracted overnight in the refrigerator, centrifuged and the supernatant fluid injected into mice. On the

* Reprinted from "California and Western Medicine," October issue, page 257.

ninth day one of the mice, obviously ill, was sacrificed. Typical lesions of psittacosis were present, and L. C. L. bodies—the causative elementary bodies of the virus—were demonstrated in the liver and spleen; smears thus establishing conclusively the diagnosis.

The patient was transferred to the infectious disease wing of the Santa Barbara County Hospital. The fever subsided by July 9, 1935, and he was released from isolation August 1, 1935, following the report from the Hooper Foundation that the sputum forwarded on July 20 failed to infect mice.

* * *

CASE 2.—Mrs. C. T. C. (62), American, housewife, and wife of a pet-shop dealer with whom she shares the duties of the shop in care of pets.

Family History.—Her husband, C. T. C., had been ill since approximately June 14, and she had taken care of the store entirely from June 22 to June 27, when she took to bed, too ill to work.

Past History.—Not important, except that through the past twenty-eight years she also had cared for the birds and animals in the shop and nursed them in illness. She related many instances of sick parakeets and live birds she had taken care of in shipments from abroad when in Chicago.

Present Illness.—Approximately June 25, she developed chilliness, followed by fever. Weakness, aching through the body, lack of appetite, marked constipation, nausea, pain in the left chest and excruciating headaches early in the morning, marked the course of her illness. In view of the probable diagnosis of disease in her husband, she was admitted to the infectious disease wing of the Santa Barbara County Hospital on July 8, 1935.

Physical Examination.—Physical examination revealed a woman of sixty, flushed and moderately prostrated, complaining of excruciating headache. There were no findings of importance except that her temperature was 102.5 degrees Fahrenheit. * * *

Course of Disease.—The patient became afebrile on July 14, and was discharged August 1, 1935. At no time was there any sputum obtained, although a slight hacking cough was present at times. Nasopharyngeal washings failed to infect mice.

EPIDEMIOLOGY

Epidemiology.—Many birds were present in the store when Mr. C. T. C. became ill June 14, 1935, including thrushes, mocking birds, redbirds, bulbuls, Petz conures, canaries, African love birds, and one Amazon parrot. Only one bird was ill, a Petz conure. This bird had been in the shopkeeper's possession for many months, having come from a dealer in Laredo, Texas. It was a source of pride to the owner that he was able to keep this sickly bird alive so long.

On June 22, Dr. K. F. Meyer of the Hooper Foundation, en route through Santa Barbara, took this bird with him to San Francisco. After exhaustive bacteriologic investigation, the organs of this bird were pronounced free from psittacosis virus.

Following this result, scrutiny of the shop drew attention to the Amazon parrot (*Amazona barbadensis* Gmelin) and, while in fair condition, suspicion warranted sacrifice of the bird. Bacteriologically, the organs were sterile, but inoculations of mice with emulsions of the liver, spleen, and kidneys produced lesions of psittacosis in the rodents. The virus readily passed.

This bird, contrary to earlier statements of the manner of purchase, had been obtained from an itinerant peddler within recent weeks. At the time of purchase the cage from which the bird came contained one dead and two live parrots.

COMMENT

Luckie has summarized the clinical manifestations and important factors in confirming the diagnosis from studies made in this country following the epidemic of 1929-1930. Roth, in discussing Luckie's paper, has outlined the restrictions by the United State Public Health Service placed on imported birds and the quarantine regulations affecting the same. These have become more stringent with each succes-

sive outbreak since the Surgeon-General issued his first order on January 25, 1930, affecting parrots entering the United States from a foreign port. It is possible that more careful regulations affecting interstate and intrastate traffic in birds of the psittacine family are required. The repeated warnings of Meyer with respect to protective measures have borne fruit, as demonstrated in a recent survey of 164 aviaries by the Department of Public Health in which 55 per cent yielded, by repeated examinations, parakeets which were free anatomically and by mouse tests of latent psittacosis.

The roentgenologic diagnosis of pulmonary lesions offered the first definite evidence of the nature of the disease. The migrating pneumonic process mentioned by Meyer is beautifully demonstrated by the roentgenograms taken nine days apart. The pathology of the pulmonary lesions, as well as other organs in man, has been thoroughly described by R. D. Lillie and by Poloyes and Lederer.

CONCLUSIONS

1. Two cases of psittacosis have been presented from one of which the virus has been demonstrated from the sputum.

2. The symptom complex has been typical of this type of infection, except for the occurrence of severe abdominal pain manifested in Case 1.

3. The epidemiology has been established and traced to an Amazon parrot in the store of the owner (Case 1).

4. The purchase of this bird from an itinerant vendor proved the break in the link of the control of the sale of psittacine birds by the Public Health authority.

5. That more stringent regulations with penalties for the sale of birds that have not been inspected by public health authorities is in order within the confines of the State of California, so that the desired-for goal—no psittacosis in the American bird industry—may be reached.

DISCUSSION

KARL F. MEYER (Hooper Foundation, Medical Center, San Francisco).—A memorandum giving a summary of investigations concerning two cases of psittacosis in owners of a pet-shop due to contact with an Amazon parrot [*Amazona barbadensis* (Gmelin) *Sive Amazona ochroptera* (Reichenow)] would be as follows: * * *

NOTE.—See outline above, in article of Dr. Steele.

Summary and Suggestions.—1. A 65-year-old pet-shop owner and his 62-year-old wife, who have doubtless had in the past contact with infected shell parakeets, contracted psittacosis through exposure to an infected Amazon parrot. The clinical course was typical and the virus was demonstrated in the sputum of one patient.

2. The parrot was recently imported. It is not unlikely that the virus was primarily discharged in the urine and thus mixed with droppings at irregular intervals. Birds, at the time of examination, in latent state of infection.

3. The importation of Central American Amazon parrots into California should be prohibited.

* * *

The observations made by Dr. Arthur B. Steele deserve some comment.

1. Contemporaneous publications on psittacosis convey the impression that the apparent immunity of bird breeders and pet-shop owners to psittacosis is particularly evident in those who have had contact with tropical birds for many years. It has been reasoned that continuous exposure to the virus may

induce subclinical infections and subsequently permanent immunity. Nobody will deny the reasonableness of these conclusions, since psittacosis in the natural and the experimental hosts (mice, guinea-pigs) has a pronounced tendency to latent infections. Furthermore, epidemiologic observations indicate that, as a rule, the beginners in the parakeet raising trade contract the disease. In fact, in California, 38 per cent of the reported cases of human psittacosis developed in the owners of large or small parakeet aviaries or in their families. Why these two pet-shop owners, who had handled sick and diseased birds for many years, failed to acquire complete protection is indeed an intriguing question. * * *

2. Epidemiologically the Santa Barbara cases furnished ample evidence concerning the unreliability of testimony collected during the illness of the parties involved. Four independent investigators had been assured that the pet-shop owner, who had voluntarily discontinued the sale of parakeets in 1932, had not purchased any tropical birds in recent months. Since he had nursed for several months a supposedly sick Petz conure, suspicion was directed to this bird and in a spell of hysteria the daughter killed the bird without affording the investigators an opportunity to study the clinical symptoms. Since this conure was found to be free from psittacosis, both anatomically and by animal tests, the pet-shop owner, who by that time had recovered, was interviewed again. He then admitted the purchase of the Amazon parrot from an itinerant peddler on May 10, 1935. At the time of the purchase the cage of the peddler housed two live and one dead parrot. Notwithstanding this fact the purchase was made. On June 20 (five weeks later) the patient, who had been ill for a week, consulted his physician.

3. Investigations by no means completed failed to establish the origin of the Amazon parrot and the source of the infection. It is not unlikely that the bird entered the country illegally. * * *

* * *

Report of Case (Reference to Illness of Doctor Hasseltine, United States Public Health Service).—In addition to the above discussion of Doctor Steele's report of cases, another case of infection of special interest to Californians is reprinted from the "Journal of the American Medical Association" (issue of August 31, 1935, page 727).

Owing to lack of funds, the State Board of Health found it necessary to close the psittacosis laboratory in Pasadena. The United States Public Health Service had detailed Doctor Hasseltine to cooperate in the state investigations. The item referring to his illness from psittacosis follows:

DOCTOR HASSELTINE ILL WITH PSITTACOSIS FOR SECOND TIME

Dr. Hermon E. Hasseltine, United States Public Health Service, is ill in San Francisco with psittacosis. This is the second time that Doctor Hasseltine has had the disease, the first attack having occurred in 1930 in Washington, where he was making laboratory studies of the epidemic that then prevailed. For three years Doctor Hasseltine was in charge of the psittacosis laboratory of the public health service at Pasadena, which was closed several months ago. He was then detailed to San Francisco to make a study of bubonic plague. While he has not been in contact with parrots recently, it is believed he acquired the infection in Pasadena, July 10, from instruments used in previous studies, which he handled while packing them for shipment. He became ill July 25 and on July 28 was admitted to the marine hospital. He is now much improved. So far as the public health service is informed, this is the only instance of psittacosis occurring a second time of which there is record. In March, 1930, Doctor Hasseltine suffered a moderately severe infection with psittacosis apparently acquired at the National Institute of Health, although definite history of his contact with infected birds could not be traced. His illness occurred at the time that ten other persons connected with the institution were infected. Two of this group were in direct contact with infected birds, but the means of transmission of the disease was not determined in the other cases. Doctor Hasseltine has been with the public health service for twenty-six years.

FIRST AID ON THE HIGHWAY

The Pacific Branch of the American Red Cross, of which A. L. Schafer is manager, has announced the establishment of highway first aid stations in a program of life saving as the result of automobile accidents.

It is stated that most accidents happen where it is not possible to obtain the services of a doctor at once. Intelligent first aid saves lives and puts the victims of accidents into the hands of members of the medical profession with a much better chance for satisfactory recovery. Existing facilities are to be used by local chapters for establishing such first aid stations.

Experience has proved that many victims of automobile accidents have lain without medical treatment for long periods of time, due to inability to secure ambulance service at once. In some cases there has been conflict of authority where such accidents have occurred near county boundary lines and in other cases extreme distance from a medical center has delayed the removal of injured persons.

It should be understood that the Red Cross first aid highway stations are not meant to take the place of medical care. Volunteer service will be rendered in emergencies, but recompense may not be received for any service that may be rendered.

It is believed that one of the most important results that may be derived through the establishment of these stations lies in their educational effect in the prevention of automobile accidents. Their presence along the highways will serve as a constant reminder to the motoring public that many motor fatalities and accidents are preventable and that due caution will help to prevent unnecessary deaths from this cause.

If you wish to join the guild of learners, there is happily no examination to pass. Welcome are all who desire to keep on learning. Three things you should do to be a member in good standing. First, cast about and develop an interest. Then, lay a good foundation for it. That is, get a suitable background; get the tools you will need—a branch of mathematics, maybe, or command of a foreign language. Finally, keep on pursuing the subject optimistically.—Leon J. Richardson.